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AN EXPLORATORY INVESTIGATION OF UPIN AND DIAGNOSTIC REPORTING IN THE NATIONAL CLAIMS HISTORY (NCH)

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1.0 INTRODUCTION

In this study, we give renewed attention to developing and evaluating innovative alternatives for packaging ancillary services with physician visits. In so doing, however, we confront several practical difficulties in identifying the ancillaries associated with each visit: (1) attributing ancillaries not provided on the same day as a physician visit, and (2) attributing ancillaries provided by other physicians. Tests sent out to an independent laboratory are often not billed on the same date as the physician visit. Also for some conditions (e.g., certain cancers), tests are routinely conducted one or more days in advance of the visit. Furthermore, it is quite common for one physician to order a test and another to perform it.

Unique Provider Identification Numbers (UPINs) and diagnostic information have only recently become available on an automated basis for the Part B Medicare claims data included in the National Claims History (NCH). In principle, this information should be extremely helpful in associating ancillary services with specific physician visits and physicians. If, for example, a patient were being treated by two different physicians for different conditions, one could match the ancillary and visit diagnoses. Alternatively, the physician ordering a given ancillary could be identified from the referring UPIN.

The quality and completeness of the "new" provider and diagnostic information, however, is not yet known. To the extent that reporting is either unreliable or incomplete, it becomes more difficult to develop bundling alternatives; and, more importantly, it becomes infeasible to administer bundled payment arrangements.

Thus, our first study task was to explore the usability of this data. In order to do this, at a comparatively early stage in the project, we conducted this investigation us~~ing~~es the five percent BMAD beneficiary sample (an on-line extract of the National Claims History) for services provided during the first quarter of 1992, January through March 1992. The data problems identified from this preliminary analysis will be taken into account in specifying and conducting the subsequent descriptive and redistributive analyses of ancillary bundling.

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2.0 DATA AND DATA CLEANING

The National Claims History (NCH) is a a new data system developed by HCFA. It is the repository of all Medicare claims for all beneficiaries, for the past four years, including the Medicare claims for services provided by hospitals, SNFs, outpatient departments,

physicians/suppliers, hospices, and home health agencies. For this analysis, we obtained all Part B claims in all settings for a five (5) percent sample of Medicare beneficiaries, for services provided during the three-month interval between January 1, 1992 and March 31, 1992 (i.e., with CWFB_1st_EXPNS_DT falling within this interval).[1] The sample was drawn in the same way as it has been for BMAD, namely, including all beneficiaries whose Social Security numbers end with 05, 20, 45, 70 or 95.

Upon receipt of this data, we selected the (1) physician/supplier and (2) outpatient claim records and sorted them into two separate data files. These claim types were coded as follows, and could thus be distinguished from the other claim types:

Record Type	**RIC_CD**	**PMT_EDIT_RIC_CD**	**CLM_TRANS_CD**
Physician/supplier	O (alpha)		
Outpatient	W	D	6

Each of the two NCH record types were "cleaned" separately. The following multi-step algorithm for cleaning physician/supplier records was obtained from HCFA and implemented by HER programmers.

A. Eliminate Canceled Sequences of Claims

1. Sort file by HICNO, FICARR_CLM_CNTL_NUM, CWF_CLM_ACRTN_DT, and CWF_CLM_ACRTN_NUM.
2. Records with identical values in the first two variables constitute all updates to a beneficiary's master file for a single claim. CWF_CLM_ACRTN_DT is the date the claim was posted to the beneficiary's account, and CWF_CLM_ACRTN_NUM is a sequential number assigned to each claim within a single day's posting activity.
3. If any update (same HICNO and FICARR_CLM_CNTL_NUM, but higher value of CWF_CLM_ACRTN_DT, or of CWF_CLM_ACRTN_NUM within CWF_CLM_ACRTN_DT) to a single claim (unique combination of HICNO and FICARR_CLM_CNTL_NUM) has a CLM_DISP_CD = 03 or 63, then entire sequence (the original claim and all its updates) is canceled, and all of the

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[1] See Glossary for definition of NCH variables.

claims with the same HICNO and FICARR_CLM_CNTL_NUM but lower values of CWF_CLM_ACRTN_DT, or of CWF_CLM_ACRTN_NUM within CWF_CLM_ACRTN_DT, are dropped from the file.

5. The CLM_ENTRY_CD field is of no use in this respect, and should be ignored.

B. Eliminate Fully-Denied Claims

1. After eliminating canceled sequences as above, any claims with a CWFB_CLM_PMT_DNL_CD = 0 (denied), X (MSP - cost avoided), or P (physician ownership denial) were dropped. These are single- or multi-line claims which were denied in their entirety.

C. Eliminate Denied Line-Items

1. Keep only line items where CWFB_PRCSG_IND_CD = A or where ((CWFB_PRCSG_IND_CD = R or S) and CWFB-ALOW_CHRG_AMT > 0).
2. All other line items are dropped.

This cleaning algorithm eliminated canceled claims and duplicate records.

HER staff developed and applied a similar cleaning algorithm to the NCH outpatient records:

1. Sort outpatient records by beneficiary number, CLM_FROM_DT, CLM_THRU_DT, PROVNUM, CLM_PMT_AMT, and CLM_QUERY_CD.

2. If CLM_QUERY_CD = 0, then find a claim that has CLM_QUERY_CD = 3 but matches on beneficiary number, CLM_FROM_DT, CLM_THRU_DT, PROVNUM, and CLM_PMT_AMT. Drop both of these claims. There may be a third claim that matches on the same fields except on CLM_PMT_AMT, but has a CLM_QUERY_CD = 5. Keep this claim if found.

We are nevertheless continuing to have some difficulty with this claim type. In particular, we found that a significant percentage of the outpatient records have claim status (e.g., credit adjustment, debit adjustment, interim claim or final claim) coded inconsistently

(e.g., 3.5 percent of the claims identified by CLM_QUERY_CD as final claims had values for CLM_FREQ_CD which indicated that there were actually interim claims). We are still working to reconcile such inconsistencies (i.e., to decide which of the indicators is correct).

Inasmuch as the validity of diagnostic coding for hospital admissions is reasonably well-established, hospital data were used herein to "validate" the diagnostic coding of Part B services provided hospitalizations. Our hospital data (for the same three months) came from HCFA's 1992 MedPAR file, even though the same hospital data were also available from NCH. Unlike MedPAR, however, the NCH hospital data are not "rolled up," i.e., with interim and final bills and adjustments consolidated into a single record. Thus, in NCH, it is not unusual for a hospital admission to be represented by two or more claims. MedPAR, on the other hand, provides all of the requisite information in a single stay; and MedPAR is a proven, reliable data source.

3.0 UPIN ANALYSIS

The Consolidated Omnibus Budget Reconciliation Act of 1985 required that Unique Physician Identification Numbers (UPINs) be assigned to all physicians who provide services under Medicare.[2] The UPINs uniquely identify individual physicians, irrespective of whether they're practicing in solo, group or hospital-based settings, or whether they move to another state. Effective January 1, 1992, UPINs were to be used by all physicians in billing services to Medicare.[3] However, "surrogate" UPINs were still being used by physicians in certain categories, e.g., interns, residents and PHS physicians.

Also effective January 1, 1992, a physician or supplier billing Medicare was required to show the name and UPIN of the ordering/referring physician. If the ordering physician was also the performing physician, the physician was was asked to enter his or her own name and UPIN in identifying the "referring physician." A referring physician UPIN is now required for all services in the following categories: (1) diagnostic laboratory services, (2) diagnostic radiology services, (3) consultative services, and (4) durable medical equipment.[4]

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[2] Providers subject to these requirements include medical doctors, doctors of osteopathy, dental medicine, dental surgery, podiatric medicine, optometry, and chiropractors.

[3] For the interim, carrier-assigned Provider Identification Numbers (PINs) are being cross-referenced with the HCFA-issued UPINs on Part B claim records before transmission to the Common Working File (CWF).

[4] Initially, physician specialty was used to determine whether or not the referring physician UPIN was required.

Effective May 1, 1992, the Common Working File (CWF) began rejecting any such claims that did not include a referring physician's UPIN.

The UPIN is a six-character identifier. To be "truly unique," a UPIN must have an alpha character in the first of six positions and a numeric character is the second through sixth positions. Our data were edited against these criteria. About four percent of the claims indicated nonunique UPIN configurations in the performing physician field; and almost 13 percent of claims indicated similarly nonunique UPINs in the referring physician field.[5]

Exhibit 1 summarizes the UPIN reporting from our physician/supplier claims data. During the first quarter of 1992 (i.e., before the carriers began editing for UPINs), somewhat less than three-fourths of physician/supplier claims reported a seemingly unique UPIN in the field meant to identify the performing physician. This claims universe, however, included nonphysician claims for which performing UPINs are neither required nor meaningful. Thus, in what follows, we focus on the UPIN reporting for physician-provided and physician-referred services.

About 89 percent of all physician claims indicated a presumptively unique UPIN for the performing physician. In principle, a unique UPIN should have been provided from all of these claims. For office visits, the rate of UPIN reporting was likewise 89 percent. Although not shown in Exhibit 1, this statistic increased only from 87.6 percent to 89.8 percent during the three-month interval of our data.

A different referring physician UPIN was provided on 19 percent of physician claims;[6]however, only three percent of office visit claims similarly indicated a different referring physician UPIN. Unfortunately, we had no independent means of ascertaining which physician services were actually referred by another physician; except as considered below, we have no way of knowing whether or not the rates of referral physician reporting are reasonably comprehensive.

For a selected group of ancillary services (see Exhibit 1), performing physician UPINs were reported on 67 percent of claims,[7] and different referring physician UPINs were

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[5] Although we say "claims," for more convenient reference, we really mean line items. Referring physician is reported in the "header" of each claim, but performing physician is actually reported on a line item basis. For purposes of this analysis, the header information was associated with each line item of service.

[6] We only counted claims which did not indicate self-referral (i.e., we did not count claims for which the performing and referring physician UPINs were the same). In our first-quarter 1992 data, self-referral was reported inconsistently across carriers. In one state, almost all of the claims indicated referral, either self-referal or referal by someone else. Referral was also coded differently in different states.

[7] This statistic increased from 64.5 percent to 68.1 percent over the three-month interval. We also found that only 68 percent of independent laboratory claims indicated the referring physician's UPIN.

reported on 37 percent. But, here again, there is no good baseline for gauging the thoroughness of reporting. Many ancillary services are provided by nonphysician providers (e.g., independent laboratories), and many do not involve physician referral.

The inherent ambiguities of UPIN reporting can nevertheless be partly resolved by focusing on those ancillary services that almost always involve referral and which can only be provided by another physician. At least three ancillary categories in Exhibit 1--advanced imaging/CAT, advanced imaging/MRI and pathology--meet those criteria. For these three ancillary categories, the rate of UPIN reporting for the performing physician ranges from 74 percent for pathology to 90 percent for CAT imaging. Furthermore, we found that the rate of different referring physician UPIN reporting is not high; it varies from 60 percent for CAT imaging to 65 percent for pathology. Again, almost all of these services would have been referred by another physician. A different referring UPIN was thus expected for most or all of these claims.

Exhibit 2 presents information on UPIN reporting by physician specialty; this also includes the limited license professionals for which UPIN reporting is also required (e.g., chiropractors and podiatrists). For the specialties included in this analysis, performing physician UPIN reporting is reasonably consistent across claim type. In general, for each specialty, the rates of UPIN reporting for office visits, consultations and ancillary services are within several percentage points of one another. For example, the performing physician UPIN is provided for 88 percent of office visits claims submitted by internists; and it is given for 90 percent of their ancillary claims. For many specialties (e.g., otolaryngology) the rate of UPIN reporting is actually somewhat higher for ancillary services than it is for office visits; for others (e.g., chiropractic and clinic/group practice) ancillary reporting is lower.

By definition, all consultations involve referal by another physicians; and all consultation claims should indicate a different referal UPIN. However, as seen in Exhibit 2, a different referring UPIN is given by fewer than two-thirds of the physicians in most specialties. In particular, the rate of referral UPIN reporting varies from 44 percent in group practices to 70 percent in rheumatology.

Except for diagnostic radiology, the percentage of office visit claims with a different referring physician UPIN indicated is never higher than 17 percent. Again, we have no independent standard for evaluating whether or not referral reporting is reasonably complete. However, for diagnostic radiology, only 59 percent of ancillary claims indicate a referring physician UPIN, even though most or all such services would have been referred by another physician.

Exhibit 3 reports information on UPIN reporting by carrier. For office visits, the rate of UPIN reporting for the performing physician varies from 41 percent, for a carrier in California, to 99.7 percent, for a carrier in New York. The rate of such reporting is less than 90 percent in only six of the 56 carrier-states included in Exhibit 3; that is, reporting problems are concentrated in a comparative handful of states.

Unfortunately, ancillary services reporting indicates a rather more inconsistent pattern. The percentage of ancillary claims with a performing physician UPIN indicated varies from seven percent in Delaware to 99.8 percent in both North and South Dakota and 99.5 percent in Florida. Inasmuch as not all ancillary services are provided by physicians, even these higher reporting rates are problematic. The rate of performing physician reporting on ancillary claims is less than 50 percent in eight of the 56 carrier-states. The referral rates indicated for ancillary services are even more variable.

Generally speaking, the ancillary reporting patterns do not show face validity; that is, they are not consistent with reasonable expectations relative to regional variation in ancillary utilization and referral patterns.

4.0 VALIDATION OF DIAGNOSES ON PHYSICIAN/SUPPLIER CLAIMS

The physician/supplier claims represent services provided to beneficiaries by a wide variety of non institutional providers, including physicians, independent laboratories, ambulance services, and suppliers of durable medical equipment (DME). The claims have the following two-part structure:

> a "header" section identifying the beneficiary to whom service(s) were rendered, the identification code of the provider entity reimbursed for the service, and related general information; and
>
> one or more "line items" (a segment which may repeat up to 99 times for a single claim), with each line item detailing one specific service rendered to the beneficiary by the provider entity identified in the header.

Each of these record elements may contain diagnostic information. The header has space for ten diagnoses, but only a few of these positions are typically used on a given claim. The diagnosis in the first position on the header is referred to as the "primary diagnosis" for

the claim.[8] Each line item also contains space for a single diagnosis only, referred to as the line-item diagnosis. When more than one diagnosis is listed in the header, the line-item diagnosis (in principle) should be the one most closely associated with the particular service described on that line item. In subsequent work, we will focus on the line item coding.

To our surprise, we found that line item reporting was actually more comprehensive or complete than diagnostic reporting in the header. Unfortunately, this was not discovered until some time after the validation studies reported herein had already been completed; otherwise, we would have focused greater attention on the line item diagnoses.

4.1 Edits for Cleaning Diagnostic Codes

Cursory inspection of the physician/supplier claims revealed that some claims contained invalid diagnosis codes. Examples included "///", "XXX", and "CHARG". Since we wanted to examine the frequency with which valid diagnosis codes are contained on physician/supplier claims, we edited the diagnosis fields according to the following specifications. Each ICD-9 code was examined ensure that only the following characters were present in each of the five positions of the non blank diagnosis fields:

Position 1: numeric, E, or V
Position 2: numeric
Position 3: numeric
Position 4: numeric or blank
Position 5: numeric or blank

Codes were judged invalid if (1) there was a non-numeric, non-blank character in any but the first position; (2) the character in the first position was not numeric and not E and not V; or (3) a space occurred in any of the first three positions. Also, the first three characters must not equal 000. Codes that were judged invalid by any of these rules were recoded to "blank" and subsequently considered to be missing.

4.2 Frequency of Valid Diagnosis Codes on Physician/Supplier Claims

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[8] HCFA's instructions to physicians are as follows, "List first the ICD-9-CM code for the diagnosis, condition, problem, or other reason for encounter/visit shown in the medical record to be chiefly responsible for the services provided. List additional codes that describe anay coexisting conditions." *Claims Review and Adjudication Procedures.*

As seen below, only 88.5 percent of the first-quarter 1992 physician/supplier claims indicated a potentially valid diagnosis (i.e., percentage of records with one or more diagnoses reported) in the claim's header section. Thus, no meaningful primary diagnosis was given for somewhat more than ten percent of the claims. The data exhibit no apparent trend; that is, the comprehensiveness of "header" diagnostic reporting did not improve over the admittedly short three-month interval examined in this investigation.

PERCENTAGE REPORTING DIAGNOSES, BY MONTH

All Claims	**January**	**February**	**March**	**All Months**
Percentage of non blank primary diagnoses	88.4%	88.5%	88.5%	88.5%
Percentage of non blank second diagnoses	67.0	67.3	67.0	67.1
Percentage of non blank third diagnoses	40.6	40.9	40.3	40.6
Percentage of non blank fourth diagnoses	20.3	20.3	19.6	20.1

Certain types of physician/supplier records were more likely to contain diagnosis codes than others. For example, claims for ambulance services often contained no diagnoses in either the header area or the line item.[9] The relative frequency of valid primary (header) diagnoses and line-item diagnoses by type of service are reported in Exhibit 4. For this tabulation, we use the Berenson-Eggers type of service classification as developed by the Urban Institute and HCFA. For most physician services (e.g., assistance at surgery, radiology and related services, evaluation and management, major and minor surgical procedures), valid line item diagnoses were present for nearly 100 percent of claims. For other types of service (e.g., durable medical equipment, ambulance services, enteral and parenteral supplies, and many types of laboratory tests), diagnoses were less likely to be present, and in fact diagnoses were reported on less than half of the claims for some of them. Although valid line item diagnoses were reported for almost 100 percent of imaging and other test claims, they were missing for ten percent or more of many laboratory test categories.

Although we have not yet completed the cleaning of outpatient department claims (see section 2.0 above), our preliminary analyses indicate that valid diagnoses are reported

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[9] This is understandable since ambulance services are requested by beneficiaries rather than by physicians; in such cases, specific diagnoses are unlikely to be available to ambulance crews or to ambulance billing personnel.

for about 97 percent of those claims. Thus, the diagnostic coding of outpatient department claims is broadly comparable to that for physician/supplier claims.

4.3 Validation Efforts

Our diagnosis cleaning algorithm established, in a basic sense, the validity of diagnosis codes on physician/supplier claims. Codes which did not conform to the rules of code construction are obviously invalid. A more difficult question concerned whether or not the claim diagnoses reliably reflect the diseases being evaluated or treated by the providers. Ideally, one would like to use medical records in validating NCH claims diagnoses (and this should be done eventually). However, such a validation study would be both expensive and time consuming.

We pursued several less costly alternatives for investigating the validity of NCH claim diagnoses. In particular, we conducted four separate validation efforts: (1) We examined the face validity of primary diagnoses reported by specialty for physician office visits; (2) we examined the face validity of diagnostic coding on ancillary claims; (3) we evaluated the consistency between diagnoses reported for office visits and ancillary services; and (4) we conducted a qualitative review of the diagnostic history reported for two samples of beneficiaries.

4.3.1 Face Validity of Office Visit Diagnoses by Specialty

A priori, we had certain expectations relative to the diagnostic mix of different specialists. One would expect, for example, that a high proportion of visits to cardiovascular specialists would have primary diagnoses of cardiovascular disease, while visits to general practitioners, family practitioners, and internists would show a broader range of primary diagnoses. Thus, as one of our validation initiatives, we examined the distribution of primary diagnoses (i.e., first-listed diagnosis in the header section of the physician claim) by specialty to determine whether or not those diagnoses had "face validity"--that is, whether or not the diagnostic distributions appeared appropriate for each specialty.

Our specialty-specific diagnostic distributions are shown in Exhibit 5. For each of 13 major specialties, we list the top-15 most frequent diagnostic codes, at the three-digit level of specificity, with an additional line showing the residual percentage distributed across other diagnostic codes. The results clearly indicate that general practitioners, family practitioners,

internists, and physicians in multigroup specialties see a broader range of illness than the other specialties included in this study. For these four "primary care" specialties, the disease profiles (as measured by primary diagnosis for office visits) are strikingly similar:[10]

Primary Diagnosis	**General Practice**	**Family Practice**	**Internal Medicine**	**Group Practice**
Diabetes mellitus	6.9 %	6.9 %	7.4 %	5.9 %
Disorders of lipoid metabolism	2.0	2.2	2.3	1.9
Essential hypertension	15.3	15.1	15.4	12.3
Chronic ischemic heart disease	2.9	2.8	5.1	3.9
Heart failure	2.0	2.6	2.5	2.0
Chronic airway obstruction	1.6	2.0	2.2	2.1
Osteoarthrosis and allied disorders	2.9	2.7	2.9	2.6
Symptoms involving respiratory system and other chest symptoms	1.8	1.9	2.4	2.1

Approximately half of all office visits to physicians in these four specialties were not counted in the 15 most frequent diagnoses for each specialty, reflecting the broad range of disease treated by the specialties.

We also found that physicians in other specialties seem to be providing some primary care. In particular, specialists are also treating diseases or conditions customarily treated by primary care physicians, and ones not self-evidently appropriate to their respective specialties. For example, 2.2 percent of office visits to cardiovascular specialists had a primary diagnosis of diabetes mellitus, while 2.9 and 7.6 percent of visits to gastroenterologists were for diabetes and essential hypertension, respectively. In general, however, the frequencies of primary diagnoses for office visits to non-primary care specialties reflect the disease profiles expected.

All of the 15 three-digit diagnostic codes listed for ear, nose, and throat specialists are referable to systems and structures in the head and neck. At the four- and five-digit levels, even diagnoses in the "general symptoms" category are referable to the head and neck. Two-thirds of primary diagnoses for cardiovascular office visits are related to cardiovascular disease, ranging from essential hypertension to ill-defined heart disease. All 15 diagnoses

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[10] These data are also displayed by specialty in Exhibit 5, but are summarized here for convenience.

listed for dermatologists are clearly in the domain of dermatology. Similar review of diagnostic code frequencies for other specialties revealed that the coding did indeed have face validity.

4.3.2 Face Validity of Ancillary Diagnoses

We similarly examined the face validity of diagnostic coding reported on ancillary claims. In particular, in Exhibit 6, we report the relative frequencies for the top 15 diagnoses, For each of the following types of service:

1. Standard imaging - chest
2. Standard imaging - musculoskeletal
3. Advanced imaging - CAT: Head
4. Advanced imaging - MRI: Brain
5. Specialist - pathology
6. Lab tests - routine venipuncture
7. Lab tests - automated general profiles
8. Lab tests - urinalysis
9. Lab tests - blood counts
10. Lab tests - glucose
11. Lab tests - bacterial cultures
12. Other tests - electrocardiograms
13. Other tests - cardiovascular stress tests
14. Other tests - electrocardiographic monitoring

These ancillary types were chosen because they occur in high volume and represent a wide range of ancillary services. Some (e.g., standard and advanced imaging, pathology, electrocardiograms, stress tests, and electrocardiographic monitoring) are most often performed or interpreted by physicians, and there is a greater likelihood that a physician will specify a diagnosis for billing purposes. Others (e.g., lab tests) are generally performed by technicians, who are less likely to have direct contact with the patient and therefore have insufficient information to enter specific diagnoses.

We found that, although primary diagnoses on ancillary claims also have face validity, a substantial proportion of ancillary claims contain diagnoses that are too general (i.e., nonspecific) to be of use in constructing diagnosis-linked packages of ambulatory care.

For example, 20 to 40 percent of the primary diagnoses reported for both standard and advanced imaging (routine radiology, CT and MRI) were coded as "V72.5 - special investigations and examinations - radiologic examination," a diagnostic code that, on the surface, is correct and appropriate, but which is not useful for relating the procedure to a specific visit or episode of illness. Furthermore, 17 to 30 percent of certain laboratory procedures (pathology, automated general profiles, blood counts, and bacterial cultures) contained the non-specific code "V72.6 - special investigations and examinations - laboratory examination," a code that is similarly useless in constructing either diagnosis-based or visit-linked packages.[11],[12]

On the other hand, those ancillary procedures wherein the physician has more contact with the patient and greater familiarity with the medical history (e.g., electrocardiograms, cardiovascular stress tests, and electrocardiographic monitoring) are more likely to have specific diagnoses reported, i.e., ones which can be meaningfully linked to specific physician visits. For example, no non-specific "V" codes were included among the top 15 diagnoses for electrocardiograms.

4.3.3 Consistency Between Office Visit and Ancillary Claims

For packaging purposes, it is important to know not only whether diagnostic codes are valid, but also whether or not the diagnoses reported on ancillary claims are consistent with those indicated for the associated office visits. Since our UPIN analysis found that referring physician UPINs are not consistently found on ancillary service claims (see section 3.0), we were unable to use specific physician identifiers in linking office visits and ancillary services. As an alternative, we assumed that ancillary services, provided on the same day as a single office visit, were ordered by the physician who billed the office visit. Under this assumption, we formed "visit/ancillary pairs," each consisting of an office visit paired with an ancillary service performed for a given beneficiary on the same day as the office visit, regardless of who provided the visit or ancillary service. All office visits (with diagnosis

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[11] "V" codes in the ICD-9 classification system constitute a "supplementary classification of factors influencing health status and contact with health services. This classification is provided to deal with occasions when circumstances other than a disease or injury classifiable to categories 001-999 (the main part of ICD) are recorded as 'diagnoses' or 'problems.'" Thus, the V codes are not intended to represent specific diseases or injuries, but rather to indicate other reasons for contact with medical providers, such as need for a specific procedure, need for preventive services, or simply to record the personal history of an acute or chronic disease or injury.

[12] We do not believe that this general finding would have been any different if we had focused on the line item diagnoses.

reported) with at least one "matching" ancillary service (with diagnosis reported) were used; and if more than one ancillary matched a given visit, separate visit-ancillary pairs were created for each of the ancillary services.

For each ancillary/visit pair, we determined (1) the relative frequency with which the primary diagnosis of the ancillary claim matched the primary diagnosis of the office visit; and (2) the relative frequency that any header diagnosis on the ancillary claim matched any header diagnosis on the office visit claim.[13] The results are shown in Exhibits 7 and 8. Exhibit 7 is organized by specialty of the physician billing the office visit, and Exhibit 8 is organized by type of ancillary services.

When only the primary diagnoses are considered, consistency between the office visit and the ancillary service ranges from to 46 to 84 percent across physician specialties, the lowest being for dermatology and the highest for urology. When all header diagnoses are considered, the measured consistency of coding improves only modestly and varies from to 50 to 86 percent. Even under this more liberal matching algorithm, a quarter or more of the same-day ancillaries indicated diagnoses not present on the office visit claims. Some of this inconsistency is probably due to the imprecise method used to pair ancillaries with office visits. Other sources of inconsistency, however, appear more important and include, most notably, the non-specific "V" codes used on many ancillary claims (see above).

When analyzed by ancillary type, the consistency between primary diagnoses ranges from 31 percent for pathology services to 92 percent for other tests. The low concordance for pathology services results in part from the frequent use of the "V" code (V72.6 - laboratory examination). Higher consistency was found for ancillary services requiring greater physician- patient contact, since the physician is more likely to be familiar with the patient or with the patient's medical history.

4.3.4 Qualitative Analysis of Diagnoses

We conducted two other "mini-studies" to qualitatively assess the apparent validity of diagnostic coding on the physician/supplier claims. In the first study, we drew a random sample of 50 beneficiaries (across all carriers) and listed out all provider/supplier claims for these beneficiaries. A clinician (Dr. Boutwell) then examined (1) the clinical consistency

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[13] Diagnoses were matched at the five-digit level. Matching at the four-digit level improves agreement rates by only one-half to one percentage point.

between header and line-item diagnoses for each claim, and (2) the clinical consistency of diagnostic coding across all claims for each beneficiary during the three-month period.

We found that the diagnostic data on claims in this sample were generally consistent, both within and across claims. Claims with incomplete diagnostic codes (no header diagnoses and/or no line-item diagnosis) were almost always from independent laboratories, ambulance services, or durable medical equipment (DME) suppliers. Diagnoses were nearly always provided in both the header and line-item sections for physician services. Furthermore, physician claims were usually of satisfactory specificity (i.e., indicating a specific clinical condition), with the exception of the common use of V72.5 ("special investigations and examinations - radiologic examination") when chest X-rays or other radiologic services were provided. The list of medical problems (as observed through diagnoses on physicians' claims) for many beneficiaries was brief, sometimes showing multiple visits and other services related to only one or two diagnoses (e.g., rheumatoid arthritis and chronic obstructive lung disease). In such cases, with consistent diagnoses, the patient was likely to be under the care of a single physician. Beneficiaries receiving services from several physicians were likely to have longer problem lists (again, as observed by claims data). However, in such cases the problems usually involved multiple body systems (e.g., major depression, Parkinson's disease, chronic obstructive lung disease, gastrointestinal hemorrhage, gastritis and anemia), and the beneficiaries were likely to be receiving care from physicians in several specialties (e.g., psychiatry, neurology, pulmonary medicine, and gastroenterology). Despite the complexity of the beneficiary's problem list, the claim diagnoses nevertheless appeared consistent with the specialist providing care and with the procedure performed.

We also drew a random sample of 25 hospital admissions (across all fiscal intermediaries), making sure that no two admissions were for the same beneficiary. All physician claims with dates of service falling between the admission and discharge dates of these admissions were then selected.

Diagnoses on the physician claims were compared with diagnoses indicated for the hospital admission. Again, claims for ambulance services and durable medical equipment (DME) were by far the most likely to be missing diagnostic codes. In this sample, without exception, physician claims contained complete diagnostic information. Physician claims were also sufficiently disease-specific, again with the notable exception of radiology claims, where V72.5 was common. Although the physician claims often contained somewhat different codes than the hospital claim (e.g., "516.3 - idiopathic fibrosing alveolitis" on the

hospital claim versus "515 - post inflammatory pulmonary fibrosis" on the physician's claim), diagnoses on hospital and physician claims were always clinically consistent. In fact, we found only one minor condition noted on a physician's claim (back pain) that was not also coded on the hospital claim. Although both hospital and physician claims allowed up to ten diagnoses, hospital claims generally contained more diagnoses than the physician claims. In comparing the header and line-item diagnoses on physician claims, the header diagnoses appeared to be more useful in developing a clinical picture of the patient: the header section often containing three or four diagnoses, compared to only one diagnosis per line item; and the line-item diagnosis was often just a repetition of the primary diagnosis (the first diagnosis in the header section).

5.0 CONCLUSIONS

This initial investigation of the UPIN and diagnostic information newly available from the National Claims History (NCH) has identified several problems pertinent to our study objectives:

- The performing physician's UPIN is not reported for 11 percent of physician-provided services, albeit reporting is considerably improved in a number of states.
- The referring physician's UPIN is inconsistently reported, with the referral rates for physician-provided services varying improbably from one state to another; also, the referring physician's UPIN is not reported for at least a third of independent laboratory and other ancillary services where physician referral is virtually required.
- Although the diagnostic coding is reasonably complete for many ancillary services (e.g., imaging and other tests), diagnosis is not reported for ten percent or more of certain laboratory tests. Also, a substantial proportion of ancillary claims contain diagnoses that are too general (i.e., nonspecific) to be useful in constructing diagnosis-linked packages of ambulatory care.
- A quarter or more of same-day ancillaries indicated diagnoses not present on the office-visit claims.

Given the apparent difficulties of using the "new" UPIN and diagnostic information, we are reluctant to rely upon them entirely in attributing ancillaries to specific physician visits. It will still be necessary to associate some ancillary services with specific visits on a date-of-service basis, as described in our Research Design Report (e.g., assuming that

ancillary services provided on the same date as a single physician visit should be attributed to that visit). We nevertheless believe that the UPIN and diagnostic information will be helpful for purposes of bundling ancillary services with physician visits. It would appear, moreover, that the diagnostic information is more useful than the UPIN information, inasmuch as the coding of referral UPINs is highly incomplete and varies importantly by state.

Over time, UPIN reporting should become considerably more comprehensive and reliable, especially after May 1992 when carriers began requiring referral reporting for selected types of services. Nevertheless, present administrative practices will continue to inhibit the usefulness of UPIN reporting for bundling purposes. When a referring physician UPIN is not indicated (for those services for which it is not required), one has no way of knowing whether the service involved no referral or simply that the referring physician UPIN was not reported. It would be much less ambiguous if a referring physician UPIN were required for all services, as it is now for diagnostic laboratory, diagnostic radiology, consultative services and DME. Also, it would be desirable to have the referring physician's UPIN shown on more than just the initial claim. In principle, for bundling purposes, we would like to distinguish all services provided on referral from another physician.

Exhibit 1
UPIN REPORTING, PERCENT OF CLAIMS

	Performing UPIN Present	Different Referring UPIN Present
All Claims	73.0 %	26.4 %
Physician Claims	89.2	19.4
Office Visits	89.0	3.4
Ancillary Group	66.5	37.1
Standard Imaging - Chest	88.7	50.0
Standard Imaging - Musculoskeletal	87.9	39.4
Advanced Imaging - CAT: Head	89.6	60.0
Advanced Imaging - MRI: Brain	87.6	63.3
Specialist - Pathology	74.1	64.8
Lab Tests - Routine Venipuncture	65.6	23.2
Lab Tests - Automated General Profiles	32.1	53.7
Lab Tests - Urinalysis	71.8	20.5
Lab Tests - Blood Counts	49.0	40.8
Lab Tests - Glucose	67.0	20.2
Lab Tests - Bacterial Cultures	37.9	45.9
Other Tests - Electrocardiograms	87.9	6.2
Other Tests - Cardiovascular Stress Tests	90.1	19.9
Other Tests - Electrocardiograph Monitoring	82.7	17.4

/REPACK/NCHRPT/TABLES/EXH1.XLS

Exhibit 2
UPIN REPORTING FOR SELECTED SPECIALTIES, IN PERCENT

	OFFICE VISIT CLAIMS			CONSULTATION CLAIMS			ANCILLARY GROUP CLAIMS (1)		
Physician Specialty (2)	Freq.	Performing MD UPIN Present	Different Referring MD UPIN Present	Freq.	Performing MD UPIN Present	Different Referring MD UPIN Present	Freq.	Performing MD UPIN Present	Different Referring MD UPIN Present
01 General Practice	175,495	87.8 %	0.9 %	2,238	87.6 %	44.9 %	98,154	87.8 %	2.7 %
02 General Surgery	65,516	90.0	7.2	17,790	92.4	60.4	18,702	92.1	13.7
03 Allergy/ Immunology	12,892	87.9	3.5	656	97.3	62.2	3,450	97.7	39.4
04 Otolaryngology	43,396	89.6	4.5	4,712	93.1	51.8	2,239	97.7	37.4
05 Anesthesiology	1,645	88.8	16.0	1,864	92.5	59.0	1,010	95.4	42.1
06 Cardiology	97,789	89.2	6.6	26,283	91.9	58.0	95,671	90.9	11.2
07 Dermatology	44,088	90.2	2.3	3,126	93.3	48.9	12,352	86.4	9.8
08 Family Practice	356,632	91.0	0.6	4,146	92.0	38.1	239,996	92.5	1.1
10 Gastroenterology	26,257	90.2	9.3	13,656	92.9	59.8	11,011	95.4	6.7
11 Internal Medicine	591,848	88.4	2.3	45,797	88.9	52.0	511,475	89.7	4.6
13 Neurology	19,136	89.4	15.5	18,342	91.6	60.0	2,440	91.7	24.3
14 Neurosurgery	4,683	90.6	15.7	2,898	92.4	59.7	264	96.6	23.9
16 OB-Gynecology	24,589	89.8	2.6	1,268	91.9	41.4	9,476	92.2	3.4
18 Ophthalmology	89,385	88.6	3.2	8,105	90.9	47.8	2,303	90.8	8.6
20 Orthopedic Surgery	60,570	89.0	6.5	6,828	91.8	50.0	51,724	91.1	8.4
24 Plastic and Reconstructive Surgery	4,121	89.5	10.5	1,090	91.3	52.5	205	87.3	6.3
25 Physical Medicine and Rehabilitation	4,778	87.4	16.8	4,411	93.4	54.8	250	85.6	6.4
26 Psychiatry	4,797	85.7	2.0	4,532	92.6	50.4	566	93.8	7.1
29 Pulmonary Disease	28,436	90.1	6.0	11,283	91.3	58.1	12,894	91.3	7.5
30 Diagnostic Radiology	4,791	90.6	46.7	3,809	93.3	66.2	508,825	90.4	58.8
33 Thoracic Surgery	5,608	89.5	15.0	4,400	91.9	62.8	1,220	90.0	10.5
34 Urology	63,339	90.1	9.3	11,364	91.8	52.9	78,103	91.0	12.5
35 Chiropractic	156	57.1	1.3	11	18.2	36.4	94	50.0	7.4
38 Geriatric Medicine	3,068	94.0	0.8	177	96.6	57.6	2,000	95.8	1.6
39 Nephrology	11,634	89.8	4.4	4,254	92.5	59.1	8,589	93.0	6.6
41 Optometrist	12,788	90.3	2.0	409	90.5	48.7	27	88.9	0.0
44 Infectious Disease	3,717	84.0	5.4	3,464	94.7	64.1	3,430	96.9	7.3
48 Podiatry	44,359	86.1	4.9	1,592	91.4	49.7	10,940	88.1	5.5
66 Rheumatology	2,768	97.7	8.7	489	97.3	69.9	3,044	96.6	12.3
70 Clinic or other Group Practice	99,351	84.3	3.0	9,684	89.3	44.0	99,181	81.1	13.6
83 Hematology/Oncology	6,165	97.0	16.4	1,390	97.3	71.2	7,198	95.3	20.5

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(1) See Exhibit 1 for ancillaries included.

(2) Aggregated by specialty prior to May 1992 when the revised specialty codes became effective.

/REPACK/NCHRPT/TABLES/EXH2.XLS

Exhibit 3
UPIN REPORTING BY CARRIER, IN PERCENT

Medicare Carrier		State	OFFICE VISIT CLAIMS		ANCILLARY GROUP CLAIMS (1)	
			Performing MD UPIN Present	Different Referring MD UPIN Present	Performing MD UPIN Present	Different Referring MD UPIN Present
01020	Aetna Life and Casualty	AK	98.6	1.1	80.9	43.0 %
00510	Alabama BC/BS	AL	99.9	0.7	87.1	20.4
00520	Arkansas BC/BS	AR	93.9	5.5	80.2	29.5
01030	Aetna Life and Casualty	AZ	99.0	8.5	64.2	51.9
00542	California BS	CA	90.2	6.3	55.1	42.7
02050	Transamerica Occidental Life	CA	40.9	1.1	38.7	15.7
00550	Colorado BC/BS	CO	90.2	8.9	54.8	39.5
10230	Travelers Insurance Co.	CT	69.8	0.8	58.8	43.2
00580	Pennsylvania BC/BS	DC	96.4	2.2	45.8	40.4
00570	Pennsylvania BC/BS	DE	97.3	1.1	7.4	67.1
00590	Florida BC/BS	FL	99.3	8.8	99.5	52.8
01040	Aetna Life and Casualty	GA	90.8	7.2	64.0	42.6
01120	Aetna Life and Casualty	HI	99.9	1.3	49.4	70.5
00640	Iowa BS	IA	98.0	4.5	84.7	22.8
05130	Equicor	ID	98.4	0.8	85.7	20.7
00621	Illinois BC/BS	IL	99.3	2.3	68.8	29.7
00630	Indiana BC/BS	IN	99.3	1.4	76.4	38.0
00650	Kansas BS	KS	97.0	0.8	90.3	16.0
00660	Kentucky BC/BS	KY	97.3	1.7	58.0	37.4
00528	Arkansas BC/BS	LA	93.5	6.5	78.5	35.3
00700	Massachusetts Blue Shield	MA	97.1	4.3	61.4	46.1
00690	Maryland Blue Shield	MD	63.5	3.7	47.7	32.8
21200	Massachusetts Blue Shield	ME	96.7	4.8	81.8	36.3
00710	Michigan BC/BS	MI	64.9	1.6	42.3	38.0
00720	Minnesota BC/BS	MN	90.6	1.8	67.4	7.9
10240	Travelers Insurance Co.	MN	69.5	3.7	81.9	42.1
00740	Kansas BS	MO	98.3	1.4	75.3	14.5
11260	Missouri General Am. Life	MO	66.1	2.3	61.4	32.9
10250	Travelers Insurance Co.	MS	73.2	0.8	80.7	25.9
00751	Montana BC/BS	MT	97.9	2.9	69.4	42.9
00655	Kansas BS	NB	98.5	0.6	91.5	15.9
05535	Prudential	NC	99.3	1.2	48.2	37.6
00820	North Dakota BC/BS	ND	99.9	3.6	99.8	22.2
00780	Massachusetts Blue Shield	NH	96.3	3.1	74.9	39.5
00860	Pennsylvania Blue Shield	NJ	97.0	1.4	50.7	39.5
01360	Aetna Life and Casualty	NM	99.0	4.7	69.8	45.4
01290	Aetna Life and Casualty	NV	99.4	10.1	59.6	54.8
00801	Blue Shield of Western NY	NY	94.1	2.6	62.4	46.5
00803	Empire BC/BS	NY	98.0	1.7	69.8	31.8
14330	Group Health Insurance, NY	NY	99.7	0.7	88.8	17.3
16360	Nationwide Insurance Co.	OH	88.7	3.1	57.8	45.1
01370	Aetna Life and Casualty	OK	99.8	5.5	72.2	48.2
01380	Aetna Life and Casualty	OR	96.4	3.3	69.9	40.7
00865	Pennsylvania BC/BS	PA	97.6	2.4	68.1	35.1
00870	Rhode Island Blue Shield	RI	70.5	0.6	47.7	24.3
00880	South Carolina BC/BS	SC	99.1	1.1	93.8	19.6
00820	North Dakota BC/BS	SD	99.9	3.6	99.8	22.2
05440	Equicor Life Assurance	TN	98.7	1.3	84.2	24.5

/REPACK/NCHRPT/TABLES/EXH3.XLS

Exhibit 3, continued

UPIN REPORTING BY CARRIER, IN PERCENT

Medicare Carrier		State	OFFICE VISIT CLAIMS Performing MD UPIN Present	OFFICE VISIT CLAIMS Different Referring MD UPIN Present	ANCILLARY GROUP CLAIMS (1) Performing MD UPIN Present	ANCILLARY GROUP CLAIMS (1) Different Referring MD UPIN Present	
00900	Texas BC/BS	TX	99.5	1.8	71.2	37.0	%
00910	Utah BC/BS	UT	99.0	1.5	88.2	18.1	
10490	Travelers Insurance Co.	VA	75.4	0.7	93.9	25.6	
00780	Massachusetts Blue Shield	VT	96.3	3.1	74.9	39.5	
00932	Washington Physician Service	WA	93.2	3.1	60.6	35.7	
00951	Wisconsin Physician Service	WI	89.5	11.4	82.4	38.9	
16510	Nationwide Insurance	WV	90.5	2.8	78.1	33.9	
00825	North Dakota BC/BS	WY	99.2	1.4	89.8	31.6	

(1) See Exhibit 1 for ancillaries included.

Exhibit 4

PRIMARY AND LINE-ITEM DIAGNOSIS REPORTING, BY BERENSON-EGGERS TYPE OF SERVICE, IN PERCENT

Type of Service	Claim Diagnosis		Line-item Diagnosis	
	#	%	#	%
ASSISTANCE AT SURGERY				
AS Assistance at Surgery	14,228	96.9	14,648	99.8
DENTAL SERVICES				
DEN Dental Services	50	87.7	50	87.7
DURABLE MEDICAL EQUIPMENT				
D1A Medical/Surgical Supplies	23,551	58.0	24,021	59.1
D1B Hospital Beds and Accessories	34	30.9	32	29.1
D1C Oxygen and Supplies	387	56.1	384	55.7
D1D Wheelchairs	177	35.6	189	38.0
D1E Other Durable Medical Equipment	346	25.5	370	27.3
D1F Orthotic and Prosthetic Devices	1,167	31.2	1,482	39.7
AMBULATORY SURGICAL FACILITIES				
F Ambulatory Surgical Facility	7	100.0	7	100.0
IMAGING				
I1A Standard Imaging - Chest	396,210	91.6	431,251	99.7
I1B Standard Imaging - Musculoskeletal	210,575	92.5	226,984	99.7
I1C Standard Imaging - Breast	45,948	91.6	50,101	99.9
I1D Standard Imaging - Contrast G.I.	35,406	92.0	38,447	99.9
I1E Standard Imaging - Nuclear Medicine	45,208	90.2	50,064	99.9
I1F Standard Imaging - Other	88,423	91.2	95,795	98.8
I2A Advanced Imaging - CAT: Head	27,954	90.8	30,741	99.9
I2B Advanced Imaging - CAT: Other	47,110	90.9	51,756	99.9
I2C Advanced Imaging - MRI: Brain	6,602	93.9	7,010	99.7
I2D Advanced Imaging - MRI: Other	7,551	93.8	8,027	99.7
I3A Echography - Eye	15,927	93.0	17,103	99.8
I3B Echography - Abdomen/Pelvis	36,878	91.3	40,318	99.8
I3C Echography - Heart	63,212	91.3	69,063	99.7
I3D Echography - Cartoid Arteries	14,408	92.2	15,552	99.5
I3E Echography - Prostate, Transrectal	3,356	97.4	3,444	100.0
I3F Echography - Other	10,184	92.8	10,935	99.6
I4A Imaging/Procedure - Heart, Incl. Cardiac Cath.	13,993	94.9	14,738	99.9
I4B Imaging/Procedure - Other	16,891	92.5	18,233	99.8
EVALUATION AND MANAGEMENT				
M1A Office Visits- New	135,917	96.3	140,731	99.7
M1B Office Visits - Established	1,728,745	95.6	1,802,837	99.7
M2A Hospital Visit - Initial	97,705	95.7	101,909	99.8
M2B Hospital Visit - Subsequent	606,125	94.6	639,472	99.8
M2C Hospital Visit - Critical Care	38,042	95.9	39,653	99.9
M3 Emergency Room Visit	123,460	92.9	132,619	99.8
M4A Home Visit	14,406	96.5	14,883	99.7
M4B Nursing Home Visit	162,498	95.8	169,395	99.9
M5A Specialist - Pathology	131,001	90.0	141,249	97.0
M5B Specialist - Psychiatry	106,285	95.1	111,081	99.4
M5C Specialist - Ophthalmology	218,358	94.3	230,424	99.5
M5D Specialist - Other	27,396	95.8	28,105	98.3
M6 Consultations	210,772	93.8	224,358	99.9

/REPACK/NCHRPT/TABLES/EXH4.XLS

Exhibit 4, continued

PRIMARY AND LINE-ITEM DIAGNOSIS REPORTING, BY BERENSON-EGGERS TYPE OF SERVICE, IN PERCENT

Type of Service	Claim Diagnosis		Line-item Diagnosis	
MISCELLANEOUS SERVICES	#	%	#	%
O1A Ambulance	16,775	60.5	15,827	57.1
O1B Chiropractic	119,130	99.1	118,681	98.7
O1C Enteral and Parenteral Supplies	666	51.6	662	51.3
O1D Chemotherapy	35,440	93.1	37,899	99.5
O1E Other Drugs	124,893	97.4	127,208	99.2
O1F Vision, Hearing, and Speech Services	22,005	81.7	22,003	81.6
ANESTHESIA				
P0 Anesthesia	213	100.0	213	100.0
MAJOR SURGICAL PROCEDURES				
P1A Major Procedure - Breast	879	95.9	914	99.7
P1B Major Procedure - Colectomy	1,637	95.5	1,710	99.8
P1C Major Procedure - Cholecystectomy	1,133	97.1	1,166	99.9
P1D Major Procedure - TURP	2,968	96.2	3,084	99.9
P1E Major Procedure - Hysterectomy	799	97.6	812	99.1
P1F Major Procedure - Exploration, Decompression, Excision of Disc	1,491	97.1	1,535	99.9
P1G Major Procedure - Other	22,452	94.6	23,701	99.8
P2A Major Procedure, Cardiovascular - CABG	2,187	95.2	2,296	100.0
P2B Major Procedure, Cardiovascular - Aneurysm Repair	409	96.5	424	100.0
P2C Major Procedure, Cardiovascular - Thromboendarterectomy	798	94.7	843	100.0
P2D Major Procedure, Cardiovascular - PTCA	2,259	95.6	2,363	100.0
P2E Major Procedure, Cardiovascular - Pacemaker Insertion	2,226	94.4	2,356	100.0
P2F Major Procedure, Cardiovascular - Other	27,692	94.9	29,152	99.9
P3A Major Procedure, Orthopedic - Hip Fracture Repair	2,261	95.0	2,379	100.0
P3B Major Procedure, Orthopedic - Hip Replacement	1,282	94.3	1,358	99.9
P3C Major Procedure, Orthopedic - Knee Replacement	1,559	94.2	1,654	99.9
P3D Major Procedure, Orthopedic - Other	5,522	96.8	5,699	99.9
EYE PROCEDURES				
P4A Eye Procedures - Corneal Transplant	282	92.5	305	100.0
P4B Eye Procedures - Cataract Removal/Lens Insertion	17,067	92.4	18,443	99.9
P4C Eye Procedures - Retinal Detachment	695	92.9	752	99.7
P4D Eye Procedures - Treatment of Retinal Lesions	2,845	92.9	3,060	99.9
P4E Eye Procedures - Other	14,888	92.4	16,096	99.9
AMBULATORY SURGICAL PROCEDURES				
P5A Ambulatory Procedures - Skin	36,261	96.4	37,454	99.6
P5B Ambulatory Procedures - Musculoskeletal	7,685	96.8	7,915	99.7
P5C Ambulatory Procedures - Inguinal Hernia Repair	2,055	95.8	2,141	99.9
P5D Ambulatory Procedures - Lithotripsy	301	96.8	311	100.0
P5E Ambulatory Procedures - Other	29,508	95.4	30,869	99.8
MINOR SURGICAL PROCEDURES				
P6A Minor Procedures - Skin	232,061	97.4	237,482	99.7
P6B Minor Procedures - Musculoskeletal	50,939	95.9	52,956	99.7
P6C Minor Procedures - Other (MFS)	210,480	93.0	216,460	95.6
P6D Minor Procedures - Other (Non-MFS)	8,155	96.2	8,395	99.0
ONCOLOGY				
P7A Oncology - Radiation Therapy	67,658	93.4	71,779	99.1
P7B Oncology - Other	30,183	93.3	32,336	99.9

/REPACK/NCHRPT/TABLES/EXH4.XLS

Exhibit 4, continued

PRIMARY AND LINE-ITEM DIAGNOSIS REPORTING, BY BERENSON-EGGERS TYPE OF SERVICE, IN PERCENT

Type of Service	Claim Diagnosis		Line-item Diagnosis	
	#	%	#	%
ENDOSCOPY				
P8A Endoscopy - Arthroscopy	1,300	97.9	1,322	99.5
P8B Endoscopy - Upper G.I.	16,746	95.1	17,589	99.8
P8C Endoscopy - Sigmoidoscopy	14,801	95.1	15,516	99.7
P8D Endoscopy - Colonoscopy	14,874	95.0	15,617	99.8
P8E Endoscopy - Cystoscopy	15,534	94.9	16,340	99.8
P8F Endoscopy - Bronchoscopy	3,675	95.0	3,867	100.0
P8G Endoscopy - Laparoscopic Cholecystectomy	1,421	96.5	1,472	99.9
P8H Endoscopy - Laryngoscopy	3,353	95.3	3,513	99.8
P8I Endoscopy - Other	5,763	96.1	5,984	99.7
DIALYSIS				
P9A Dialysis Services (MFS)	11,885	95.4	12,454	100.0
P9B Other Dialysis Services (Non-MFS)	17,787	93.3	19,067	100.0
LABORATORY TESTS				
T1A Lab Tests - Routine Venipuncture	445,808	85.9	480,844	92.7
T1B Lab Tests - Automated General Profiles	227,808	72.2	272,495	86.4
T1C Lab Tests - Urinalysis	227,956	88.2	243,497	94.2
T1D Lab Tests - Blood Counts	355,701	79.0	399,964	88.8
T1E Lab Tests - Glucose	102,842	85.6	112,726	93.9
T1F Lab Tests - Bacterial Cultures	61,606	74.0	71,105	85.5
T1G Lab Tests - Other (MFS)	33,064	90.9	34,914	96.0
T1H Lab Tests - Other (Non-MFS)	1,003,767	73.1	1,208,091	88.0
OTHER TESTS				
T2A Other Tests - Electrocariograms	132,641	95.0	138,304	99.0
T2B Other Tests - Cardiovascular Stress Tests	18,460	92.3	19,984	99.9
T2C Other Tests - Electrocardiographic Monitoring	17,697	91.6	19,086	98.8
T2D Other Tests - Other	128,182	92.3	137,691	99.2
EXCEPTIONS/UNCLASSIFIED				
Y1 Exceptions/Unclassified - CPT Codes	1,661	94.4	1,722	97.8
Y2 Exceptions/Unclassified - Non-MFS	42,383	59.9	55,217	78.1
Z1 Exceptions/Unclassified - Local [Level 3] Codes	20,633	87.7	20,434	86.9
Z2 Exceptions/Unclassified - Alpha [Level 2] Codes	1,483	85.7	1,639	94.7

Exhibit 5

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty (1)	Frequency	Percent
01 GENERAL PRACTICE		
250 Diabetes mellitus	11,827	6.9 %
272 Disorders of lipoid metabolism	3,373	2.0
401 Essential Hypertension	26,407	15.3
402 Hypertensive heart disease	2,580	1.5
414 Chronic ischemic heart disease	5,046	2.9
428 Heart failure	3,386	2.0
465 Acute upper respiratory infections of multiple or unspecified sites	4,419	2.6
466 Acute bronchitis and bronchiolitis	5,009	2.9
490 Bronchitis, not specified as acute or chronic	2,604	1.5
496 Chronic airway obstruction, not elsewhere classified	2,821	1.6
599 Other disorders of urethra and urinary tract	2,983	1.7
715 Osteoarthrosis and allied disorders	5,014	2.9
716 Other and unspecified arthropathies	3,159	1.8
724 Other and unspecified disorders of back	2,570	1.5
780 General symptoms	3,311	1.9
786 Symptoms involving respiratory system and other chest symptoms	3,180	1.8
All Other Diagnoses	84,919	49.2
02 GENERAL SURGERY		
174 Malignant neoplasm of female breast	2,164	3.4
250 Diabetes mellitus	1,936	3.1
401 Essential Hypertension	4,663	7.4
414 Chronic ischemic heart disease	1,021	1.6
443 Other peripheral vascular disease	1,203	1.9
454 Varicose veins of lower extremeties	757	1.2
465 Acute upper respiratory infections of multiple or unspecified sites	769	1.2
550 Inguinal hernia	1,272	2.0
553 Other hernia of adbominal cavity w/o mention of obstruction or gangrene	833	1.3
569 Other disorders of intestine	847	1.3
574 Cholelithiasis	760	1.2
610 Benign mammary dysplasias	1,509	2.4
611 Other disorders of breast	2,011	3.2
707 Chronic ulcer of skin	1,464	2.3
716 Other and unspecified arthropathies	792	1.3
786 Symptoms involving respiratory system and other chest symptoms	824	1.3
789 Other symptoms involving abdomen and pelvis	2,096	3.3
V103 Personal history of malignant neoplasm - breast	707	1.1
All Other Diagnoses	37,562	59.5
04 EAR, NOSE THROAT		
380 Disorders of external ear	7,314	17.5
381 Nonsuppurative otitis media and Eustachian tube disorders	2,972	7.1
382 Suppurative and unspecified otitis media	1,441	3.5
386 Vertiginous syndromes and other disorders of vestibular system	1,058	2.5
388 Other disorder of ear	1,999	4.8
389 Hearing loss	3,663	8.8
461 Acute sinusitis	1,138	2.7
462 Acute pharyngitis	548	1.3
470 Deflected nasal septum	517	1.2
472 Chronic pharyngitis and nasopharyngitis	1,128	2.7
473 Chronic sinusitis	1,905	4.6
477 Allergic rhinitis	3,480	8.3

Exhibit 5, continued

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty	Frequency	Percent
04 EAR, NOSE THROAT (continued)		
478 Other diseases of upper respiratory tract	813	1.9 %
780 General symptoms	975	2.3
784 Symptoms involoving head and neck	1,879	4.5
All Other Diagnoses	41,720	26.3
06 CARDIOVASCULAR		
250 Diabetes mellitus	2,009	2.2
272 Disorders of lipoid metabolism	1,406	1.5
401 Essential Hypertension	10,816	11.7
402 Hypertensive heart disease	2,171	2.4
411 Other acute and subacute forms of ischemic heart disease	1,316	1.4
413 Angina pectoris	5,675	6.2
414 Chronic ischemic heart disease	21,895	23.7
424 Other diseases of endocardium	2,491	2.7
425 Cardiomyopathy	1,470	1.6
427 Cardiac dysrhythmias	9,043	9.8
428 Heart failure	5,388	5.8
429 Ill-defined descriptions and complications of heart disease	1,706	1.8
496 Chronic airway obstruction, not elsewhere classified	978	1.1
780 General symptoms	1,298	1.4
786 Symptoms involving respiratory system and other chest symptoms	4,793	5.2
All Other Diagnoses	19,523	21.5
07 DERMATOLOGY		
110 Dermatophytosis	1,272	3.0
173 Other malignant neoplasm of skin	2,079	4.9
216 Benign neoplasm of skin	1,083	2.6
238 Neoplasm of uncertain behavior and other unspecified sites and tissues	823	1.9
454 Varicose veins of lower extremities	957	2.3
690 Erythematosquamous dermatosis	2,180	5.2
691 Atopic dermatitis and related conditions	944	2.2
692 Contact dermatitis and other eczema	6,971	16.5
695 Erythematous conditions	1,994	4.7
696 Psoriasis and similar disorders	3,151	7.5
698 Pruritus and related conditions	1,711	4.0
702 Other dermatoses	5,439	12.9
704 Diseases of hair and hair follicles	1,007	2.4
706 Disease of sebaceous glands	2,136	5.1
709 Other disorders of skin and subcutaneous tissue	762	1.8
All Other Diagnoses	9,758	23.0
08 FAMILY PRACTICE		
250 Diabetes mellitus	23,703	6.9
272 Disorders of lipoid metabolism	7,652	2.2
401 Essential Hypertension	52,258	15.1
414 Chronic ischemic heart disease	9,693	2.8
427 Cardiac dysrhythmias	6,203	1.8
428 Heart failure	8,848	2.6
465 Acute upper respiratory infections of multiple or unspecified sites	7,510	2.2
466 Acute bronchitis and bronchiolitis	10,323	3.0

Exhibit 5, continued

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty (1)	Frequency	Percent
08 FAMILY PRACTICE (continued)		
490 Bronchitis, not specified as acute or chronic	5,693	1.6 %
496 Chronic airway obstruction, not elsewhere classified	7,051	2.0
599 Other disorders of urethra and urinary tract	6,147	1.8
715 Osteoarthrosis and allied disorders	9,283	2.7
716 Other and unspecified arthropathies	5,073	1.5
780 General symptoms	7,567	2.2
786 Symptoms involving respiratory system and other chest symptoms	6,722	1.9
789 Other symptoms involving abdomen and pelvis	5,163	1.5
All Other Diagnoses	166,928	48.2
10 GASTROENTEROLOGY		
211 Benign neoplasm of other parts of digestive system	868	3.5
250 Diabetes mellitis	707	2.9
401 Essential Hypertension	1,879	7.6
414 Chronic ischemic heart disease	411	1.7
530 Diseases of esophagus	1,566	6.3
535 Gastritis and duodenitis	687	2.8
555 Regional enteritis	397	1.6
558 Other noninfectious gastroenteritis and colitis	777	3.1
562 Diverticula of intestine	894	3.6
564 Functional digestive disorders, not elsewhere classified	1,268	5.1
569 Other disorders of intestine	558	2.3
571 Chronic liver disease and cirrhosis	527	2.1
578 Gastrointestinal hemorrhage	602	2.4
786 Symptoms involving respiratory system and other chest symptoms	401	1.6
787 Symptoms involving digestive system	797	3.2
789 Other symptoms involving abdomen and pelvis	2,527	10.2
All Other Diagnoses	10,778	43.5
11 INTERNAL MEDICINE		
174 Malignant neoplasm of female breast	7,870	1.4
250 Diabetes mellitis	41,566	7.4
272 Disorders of lipoid metabolism	12,936	2.3
401 Essential Hypertension	87,321	15.4
402 Hypertensive heart disease	8,374	1.5
414 Chronic ischemic heart disease	28,780	5.1
427 Cardiac dysrhythmias	14,266	2.5
428 Heart failure	14,377	2.5
466 Acute bronchitis and bronchiolitis	10,185	1.8
496 Chronic airway obstruction, not elsewhere classified	12,471	2.2
714 Rheumatoid arthritis and other inflammatory polyartropathies	10,220	1.8
715 Osteoarthrosis and allied disorders	16,337	2.9
780 General symptoms	10,423	1.8
786 Symptoms involving respiratory system and other chest symptoms	13,387	2.4
789 Other symptoms involving abdomen and pelvis	8,339	1.5
All Other Diagnoses	268,562	47.5

Exhibit 5, continued

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty (1)		Frequency	Percent %
13	NEUROLOGY		
332	Parkinson's disease	2,987	16.4
333	Other extrapyramidial disease and abnormal movement disorders	556	3.0
340	Multiple sclerosis	397	2.2
345	Epilepsy	870	4.8
346	Migraine	315	1.7
355	Mononeuritis of lower limb	269	1.5
356	Hereditary and idiopathic peripheral neuropathy	497	2.7
434	Occlusion of cerebral arteries	410	2.2
435	Transient cerebral ischemia	560	3.1
436	Acute, but ill-defined, cerebrovascular disease	783	4.3
723	Other disorders of cervical region	275	1.5
724	Other and unspecified disorders of back	706	3.9
729	Other disorders of soft tissues	398	2.2
780	General symptoms	1,970	10.8
781	Symptoms involving nervous and musculoskeletal systems	442	2.4
784	Symptoms involving head or neck	769	4.2
	All Other Diagnoses	6,044	33.1
18	OPHTHALMOLOGY		
362	Other retinal disorders	8,539	10.3
364	Disorders of iris and ciliary body	1,585	1.9
365	Glaucoma	24,316	29.2
366	Cataract	18,531	22.3
368	Visual disturbances	914	1.1
370	Keratitis	2,222	2.7
371	Corneal opacity and other disorders of cornea	1,753	2.1
372	Disorders of conjuntiva	3,712	4.5
373	Inflammation of eyelids	3,112	3.7
374	Other disorders of eyelids	1,190	1.4
375	Disorders of lacrimal system	1,486	1.8
379	Other disorders of eye	4,595	5.5
V431	Organ or tissue replaced by other means - lens	3,322	4.0
	All Other Diagnoses	7,937	9.5
20	ORTHOPEDIC SURGERY		
354	Mononeuritis of upper limb and mononeuritis multiplex	1,186	2.0
715	Osteoarthosis and allied disorders	11,147	19.2
716	Other and unspecified arthropathies	1,165	2.0
717	Internal derangement of knee	1,045	1.8
719	Other and unspecified disorders of joint	3,174	5.5
721	Spondylosis and allied disorders	1,359	2.3
722	Intervertebral disc disorders	2,266	3.9
724	Other and unspecified disorders of back	3,677	6.3
726	Peripheral enthesopathies and allied syndromes	4,411	7.6
727	Other disorders of synovium, tendon, and bursa	1,986	3.4
733	Other disorders of bone and cartilage	1,069	1.8
812	Fracture of humerus	1,567	2.7
813	Fracture of radius and ulna	1,639	2.8
820	Fracture of neck of femur	1,480	2.6
840	Sprains and strains of shoulder and upper arm	1,001	1.7
	All Other Diagnoses	19,767	34.4

Exhibit 5, continued

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty (1)	Frequency	Percent
29 PULMONARY DISEASE		
162 Malignant neoplasm of trachea, bronchus, and lung	542	2.0 %
250 Diabetes mellitus	653	2.4
401 Essential Hypertension	1,828	6.8
414 Chronic ischemic heart disease	541	2.0
428 Heart failure	584	2.2
466 Acute bronchitis and bronchiolitis	945	3.5
486 Pneumonia, organism unspecified	397	1.5
490 Bronchitis, not specified as acute or chronic	390	1.4
491 Chronic bronchitis	1,420	5.3
492 Emphysema	988	3.7
493 Asthma	3,162	11.7
494 Bronchiectasis	399	1.5
496 Chronic airway obstruction, not elsewhere classified	5,090	18.8
518 Other diseases of lung	458	1.7
780 General symptoms	378	1.4
786 Symptoms involving respiratory system and other chest symptoms	1,678	6.2
All Other Diagnoses	7,553	27.9
33 THORACIC SURGERY		
162 Malignant neoplasm of trachea, bronchus, and lung	245	4.5
401 Essential Hypertension	159	2.9
414 Chronic ischemic heart disease	207	3.8
427 Cardiac dysrhythmias	110	2.0
433 Occlusion and stenosis of precerebral arteries	346	6.4
440 Atherosclerosis	203	3.8
441 Aortic aneurysm	228	4.2
443 Other peripheral vascular disease	446	8.3
444 Arterial embolism and thrombosis	205	3.8
447 Other disorders of arteries and arterioles	102	1.9
454 Varicose veins of lower extremities	126	2.3
459 Other disorders of circulatory system	132	2.4
707 Chronic ulcer of skin	147	2.7
729 Other disorders of soft tissues	96	1.8
786 Symptoms involving respiratory system and other chest symptoms	150	2.8
All Other Diagnoses	2,494	46.4
34 UROLOGY		
185 Malignant neoplasm of prostate	11,877	19.7
188 Malignant neoplasm of bladder	1,448	2.4
344 Other paralytic syndromes	967	1.6
592 Calculus of kidney and ureter	1,312	2.2
595 Cystitis	2,010	3.3
596 Other disorders of bladder	1,190	2.0
598 Urethral stricture	1,170	1.9
599 Other disorders of urethra and urinary tract	6,601	10.9
600 Hyperplasia of prostate	16,705	27.7
601 Inflammatory diseases of prostate	2,436	4.0
607 Disorders of penis	2,258	3.7
625 Pain and other symptoms associated with female genital organs	724	1.2
788 Symptoms involving urinary system	3,471	5.8
All Other Diagnoses	8,128	13.6

Exhibit 5, continued

PRIMARY DIAGNOSIS REPORTING, BY SPECIALTY FOR PHYSICIAN OFFICE VISIT CLAIMS, IN PERCENT

Physician Specialty (1)	Frequency	Percent
39 NEPHROLOGY		
250 Diabetes mellitus	848	7.6 %
272 Disorders of lipoid metabolism	163	1.5
285 Other and unspecified anemias	160	1.4
401 Essential Hypertension	2,257	20.2
403 Hypertensive renal disease	214	1.9
414 Chronic ischemic heart disease	256	2.3
428 Heart failure	230	2.1
496 Chronic airway obstruction, not elsewhere classified	159	1.4
585 Chronic renal failure	1,036	9.3
586 Renal failure, unspecified	137	1.2
593 Other disorders of kidney and ureter	269	2.4
599 Other disorders of urethra and urinary tract	138	1.2
715 Osteoarthrosis and allied disorders	136	1.2
780 General symptoms	160	1.4
786 Symptoms involving respiratory system and other chest syndromes	172	1.5
V420 Organ or tissue replaced by transplant - kidney	712	6.4
All Other Diagnoses	4,117	37.0
70 GROUP PRACTICE		
250 Diabetes mellitus	5,221	5.9
272 Disorders of lipoid metabolism	1,666	1.9
401 Essential Hypertension	10,909	12.3
414 Chronic ischemic heart disease	3,447	3.9
427 Cardiac dysrhythmias	1,682	1.9
428 Heart failure	1,799	2.0
465 Acute upper respiratory infections of multiple or unspecified sites	1,304	1.5
466 Acute bronchitis and bronchiolitis	1,627	1.8
496 Chronic airway obstruction, not elsewhere classified	1,822	2.1
599 Other disorders of urethra and urinary tract	1,081	1.2
715 Osteoarthrosis and allied disorders	2,282	2.6
724 Other and unspecified disorders of back	1,355	1.5
780 General symptoms	1,622	1.8
786 Symptoms involving respiratory system and other chest syndromes	1,838	2.1
789 Other symptoms involving abdomen and pelvis	1,301	1.5
All Other Diagnoses	49,853	56.0

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(1) Aggregated by specialty prior to May 1992 when the revised specialty codes became effective.

Exhibit 6

RELATIVE FREQUENCY OF THE TOP 15 PRIMARY DIAGNOSES WITHIN SELECTED ANCILLARY GROUPS

Ancillary Group	Frequency	Percent
STANDARD IMAGING - CHEST		
401 Essential Hypertension	6,051	1.5 %
414 Chronic ischemic heart disease	7,316	1.8
427 Cardiac dysrhythmias	3,847	1.0
428 Heart failure	15,631	3.9
429 Ill-defined descriptions and complications of heart disease	8,842	2.2
466 Acute bronchitis and bronchiolitis	4,438	1.1
486 Pneumonia, organism unspecified	17,637	4.5
496 Chronic airway obstruction, not elsewhere classified	7,625	1.9
511 Pleurisy	5,474	1.4
514 Pulmonary congestion and hypostasis	5,002	1.3
518 Other diseases of lung	11,107	2.8
780 General symptoms	5,586	1.4
786 Symptoms involving respiratory system and other chest symptoms	55,243	13.9
789 Other symptoms involving abdomen and pelvis	4,797	1.2
V725 Special investigations and examinations - radiological examination	135,685	34.3
All Other Diagnoses	101,929	25.8
STANDARD IMAGING- MUSCULOSKELETAL		
715 Osteoarthrosis and allied disorders	18,319	8.7
716 Other and unspecified arthropathies	3,293	1.6
719 Other and unspecified disorders of joint	15,411	7.3
722 Intervertebral disc disorders	3,263	1.5
724 Other and unspecified disorders of back	10,113	4.8
726 Peripheral enthesopathies and allied syndromes	5,355	2.5
729 Other disorders of soft tissues	3,987	1.9
733 Other disorders of bone and cartilage	3,331	1.6
735 Acquired deformities of toe	2,694	1.3
786 Symptoms involving respiratory system and other chest symptoms	4,828	2.3
812 Fracture of humerus	3,239	1.5
813 Fracture of radius and ulna	4,529	2.2
820 Fracture of neck of femur	6,590	3.1
959 Injury, other and unspecified	9,062	4.3
V725 Special investigations and examinations - radiological examination	47,146	22.4
All Other Diagnoses	69,415	33.0
ADVANCED IMAGING - CAT: HEAD		
298 Other nonorganic psychoses	286	1.0
331 Other cerbral degenerations	1,146	4.1
348 Other conditions of brain	448	1.6
434 Occlusion of cerebral arteries	773	2.8
435 Transient cerbral ischemia	656	2.3
436 Acute, but ill-defined, cerebrovascular disease	1,620	5.8
437 Other and ill-defined cerebrovascular disease	292	1.0
780 General symptoms	1,735	6.2
784 Symptoms involving head and neck	1,574	5.6
786 Symptoms involving respiratory system and other chest symptoms	802	2.9
854 Intracranial injury of other and unspecified nature	289	1.0
V725 Special investigations and examinations - radiological examination	11,083	39.6
All Other Diagnoses	7,250	26.1

/REPACK/NCHRPT/TABLES/EXH6.XLS

Exhibit 6, continued

RELATIVE FREQUENCY OF THE TOP 15 PRIMARY DIAGNOSES WITHIN SELECTED ANCILLARY GROUPS

Ancillary Group	Frequency	Percent
ADVANCED IMAGING- MRI: BRAIN		
191 Malignant neoplasm of brain	139	2.1 %
225 Benign neoplasm of brain and other parts of nervous system	128	1.9
239 Neoplasms of unspecified nature	105	1.6
298 Other nonorganic psychoses	77	1.2
331 Other cerbral degenerations	340	5.1
348 Other conditions of brain	218	3.3
434 Occlusion of cerebral arteries	303	4.6
435 Transient cerbral ischemia	147	2.2
436 Acute, but ill-defined, cerebrovascular disease	300	4.5
437 Other and ill-defined cerebrovascular disease	164	2.5
780 General symptoms	439	6.6
784 Symptoms involving head and neck	367	5.6
V725 Special investigations and examinations - radiological examination	2,297	34.8
All Other Diagnoses	1,578	24.0
SPECIALIST- PATHOLOGY		
162 Malignant neoplasm of trachea, bronchus, and lung	1,318	1.0
173 Other malignant neoplasm of skin	8,134	6.2
185 Malignant neoplasm of prostate	2,318	1.8
211 Benign neoplasm of other parts of digestive system	3,344	2.6
216 Benign neoplasm of skin	2,992	2.3
238 Neoplasm of uncertain behavior of other and unspecified sites and tissu	1,459	1.1
239 Neoplasms of unspecified nature	3,006	2.3
600 Hyperplasia of prostate	2,674	2.0
616 Inflammatory disease of cervix, vagina, and vulva	1,675	1.3
627 Menopausal and postmenopausal disorders	3,567	2.7
702 Other dermatoses	4,435	3.4
709 Other disorders of skin and subcutaneous tissue	1,585	1.2
795 Nonspecific abnormal histological and immunological findings	1,315	1.0
V726 Special investigations and examinations - laboratory examination	38,073	29.0
All Other Diagnoses	55,106	42.1
LAB TESTS - ROUTINE VENIPUCTURE		
174 Malignant neoplasm of female breast	5,245	1.2
244 Acquired hypothyroidism	5,570	1.2
250 Diabetes mellitus	42,236	9.5
272 Disorders of lipoid metabolism	24,399	5.5
285 Other and unspecified anemias	7,656	1.7
401 Essential Hypertension	42,682	9.6
414 Chronic ischemic heart disease	18,578	4.2
427 Cardiac dysrhythmias	11,457	2.6
428 Heart failure	11,427	2.6
496 Chronic airway obstruction, not elsewhere classified	5,748	1.3
714 Rheumatoid arthritis and other inflammatory polyarthropathies	6,926	1.6
715 Osteoarthrosis and allied disorders	6,750	1.5
780 General symptoms	12,183	2.7
786 Symptoms involving respiratory system and other chest symptoms	6,114	1.4
V726 Special investigations and examinations - laboratory examination	39,302	8.8
All Other Diagnoses	199,535	44.6

/REPACK/NCHRPT/TABLES/EXH6.XLS

Exhibit 6, continued

RELATIVE FREQUENCY OF THE TOP 15 PRIMARY DIAGNOSES WITHIN SELECTED ANCILLARY GROUPS

Ancillary Group	Frequency	Percent
LAB TESTS - AUTOMATED GENERAL PROFILES		
000 Invalid	2,706	1.2 %
250 Diabetes mellitus	14,998	6.6
272 Disorders of lipoid metabolism	10,903	4.8
276 Disorders of fluid, electrolyte, and acid-base balance	3,212	1.4
285 Other and unspecified anemias	3,364	1.5
401 Essential Hypertension	19,825	8.7
414 Chronic ischemic heart disease	7,314	3.2
427 Cardiac dysrhythmias	2,606	1.1
428 Heart failure	5,479	2.4
715 Osteoarthrosis and allied disorders	2,829	1.2
780 General symptoms	9,751	4.3
799 Other ill-defined and unknown causes of morbidity and mortality	6,130	2.7
999 Complications of medical care, not elsewhere classified	4,729	2.1
V726 Special investigations and examinations - laboratory examination	59,308	26.0
All Other Diagnoses	74,654	32.8
LAB TEST- URINALYSIS		
185 Malignant neoplasm of prostate	8,754	3.8
250 Diabetes mellitus	13,780	6.0
272 Disorders of lipoid metabolism	4,453	2.0
401 Essential Hypertension	16,968	7.4
414 Chronic ischemic heart disease	5,299	2.3
595 Cystitis	5,932	2.6
599 Other disorders of urethra and urinary tract	30,033	13.2
600 Hyperplasia of prostate	17,501	7.7
601 Inflammatory diseases of prostate	3,225	1.4
714 Rheumatoid arthritis and other inflammatory polyarthropathies	4,165	1.8
715 Osteoarthrosis and allied disorders	3,277	1.4
780 General symptoms	4,436	1.9
788 Symptoms involving urinary system	6,852	3.0
789 Other symptoms involving abdomen and pelvis	3,740	1.6
V726 Special investigations and examinations - laboratory examination	14,330	6.3
All Other Diagnoses	85,211	37.6
LAB TESTS- BLOOD COUNTS		
153 Malignant neoplasm of colon	5,143	1.4
174 Malignant neoplasm of female breast	7,870	2.2
250 Diabetes mellitus	12,350	3.5
272 Disorders of lipoid metabolism	8,559	2.4
285 Other and unspecified anemias	15,957	4.5
401 Essential Hypertension	24,012	6.8
414 Chronic ischemic heart disease	9,926	2.8
428 Heart failure	5,537	1.6
714 Rheumatoid arthritis and other inflammatory polyarthropathies	8,690	2.4
715 Osteoarthrosis and allied disorders	5,505	1.5
780 General symptoms	13,539	3.8
786 Symptoms involving respiratory system and other chest symptoms	4,626	1.3
789 Other symptoms involving abdomen and pelvis	4,465	1.3
799 Other ill-definied and unknown causes of morbidity and mortality	4,688	1.3
999 Complications of medical care, not elsewhere classified	4,608	1.3
V726 Special investigations and examinations - laboratory examination	60,885	17.1
All Other Diagnoses	220,226	61.9

Exhibit 6, continued

RELATIVE FREQUENCY OF THE TOP 15 PRIMARY DIAGNOSES WITHIN SELECTED ANCILLARY GROUPS

Ancillary Group	Frequency	Percent
LAB TESTS- GLUCOSE		
000 Invalid	1,066	1.0 %
250 Diabetes mellitus	52,221	50.8
272 Disorders of lipoid metabolism	1,806	1.8
401 Essential Hypertension	7,497	7.3
414 Chronic ischemic heart disease	2,605	2.5
428 Heart failure	1,477	1.4
780 General symptoms	1,478	1.4
V726 Special investigations and examinations - laboratory examination	6,764	6.5
All Other Diagnoses	27,928	27.3
LAB TESTS- BACTERIAL CULTURES		
000 Invalid	914	1.5
136 Other and unspecified infectious and parasitic diseases	604	1.0
185 Malignant neoplasm of prostate	1,021	1.7
250 Diabetes mellitus	1,199	1.9
401 Essential Hypertension	1,376	2.2
462 Acute pharyngitis	1,022	1.7
595 Cystitis	1,685	2.7
599 Other disorders of urethra and urinary tract	12,697	20.6
600 Hyperplasia of prostate	1,769	2.9
780 General symptoms	1,490	2.4
788 Symptoms involving urinary system	1,533	2.5
799 Other ill-defined and unknown causes of morbidity and mortality	1,282	2.1
999 Complications of medical care, not elsewhere classified	703	1.1
V726 Special investigations and examinations - laboratory examination	15,151	24.6
All Other Diagnoses	19,160	31.1
OTHER TESTS- ELECTROCARDIOGRAMS		
250 Diabetes mellitus	4,049	3.1
272 Disorders of lipoid metabolism	2,525	1.9
401 Essential Hypertension	16,257	12.3
402 Hypertensive heart disease	2,730	2.1
411 Other acute and subacute forms of ischemic heart disease	1,712	1.3
413 Angina pectoris	5,880	4.4
414 Chronic ischemic heart disease	17,225	13.0
427 Cardiac dysrhythmias	12,820	9.7
428 Heart failure	5,151	3.9
429 Ill-defined descriptions and complications of heart disease	2,370	1.8
496 Chronic airway obstruction, not elsewhere classified	2,033	1.5
715 Osteoarthrosis and allied disorders	1,695	1.3
780 General symptoms	3,242	2.4
785 Symptoms involving cardiovascular system	2,358	1.8
786 Symptoms involving respiratory system and other chest symptoms	13,833	10.4
All Other Diagnoses	38,761	29.1

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Exhibit 6, continued

RELATIVE FREQUENCY OF THE TOP 15 PRIMARY DIAGNOSES WITHIN SELECTED ANCILLARY GROUPS

Ancillary Group	Frequency	Percent
OTHER TESTS - CARDIOVASCULAR STRESS TESTS		
401 Essential Hypertension	629	3.4 %
410 Acute myocardial infarction	507	2.7
411 Other acute and subacute forms of ischemic heart disease	710	3.8
413 Angina pectoris	1,491	8.1
414 Chronic ischemic heart disease	4,481	24.3
424 Other diseases of endocardium	258	1.4
427 Cardiac dysrhythmias	1,065	5.8
428 Heart failure	269	1.5
429 Ill-defined descriptions and complications of heart disease	457	2.5
780 General symptoms	237	1.3
785 Symptoms involving cardiovascular system	305	1.7
786 Symptoms involving respiratory system and other chest symptoms	5,101	27.6
794 Nonspecific abnormal results of function studies	264	1.4
V45 Other postsurgical states	246	1.3
V72 Special investigations and examinations	237	1.3
All Other Diagnoses	2,203	11.9
OTHER TESTS - ELECTROCARDIOGRAPH MONITORING		
401 Essential Hypertension	484	2.7
411 Other acute and subacute forms of ischemic heart disease	190	1.1
413 Angina pectoris	378	2.1
414 Chronic ischemic heart disease	1,091	6.2
424 Other diseases of endocardium	203	1.1
427 Cardiac dysrhythmias	5,850	33.1
428 Heart failure	480	2.7
429 Ill-defined descriptions and complications of heart disease	207	1.2
780 General symptoms	1,793	10.1
785 Symptoms involving cardiovascular system	1,862	10.5
786 Symptoms involving respiratory system and other chest symptoms	1,103	6.2
E94 Adverse effects of drugs and medicines	638	3.6
All Other Diagnoses	3,418	19.4

Exhibit 7

FREQUENCY OF MATCHING DIAGNOSIS CODES BETWEEN PHYSICIAN VISIT AND ANCILLARY SERVICE, BY SPECIALTY

	Number of Eligible Pairs (ALL ANCILLARIES)	Primary Diagnosis of Physician Visit Equal to Primary Diagnosis of Ancillary Service (1)		Any Diagnosis of Physician Visit Equal to Any Diagnosis of Ancillary Service (1)	
Specialty		Frequency	Percent	Frequency	Percent
General Practice	132,505	86,132	65.0	94,028	71.0 %
General Surgery	24,776	14,903	60.2	16,210	65.4
Ear, Nose, Throat	16,168	12,639	78.2	12,992	80.4
Cardiovascular	95,637	68,632	71.8	72,497	75.8
Dermatology	7,022	3,250	46.3	3,519	50.1
Family Practice	314,455	210,007	66.8	230,252	73.2
Gastroenterology	18,211	10,362	56.9	11,252	61.8
Internal Medicine	700,785	478,429	68.3	521,713	74.4
Neurology	5,169	2,563	49.6	2,759	53.4
Ophthalmology	5,714	3,193	55.9	3,426	60.0
Orthopedic Surger	33,301	27,761	83.4	28,283	84.9
Pulmonary Disease	25,737	17,841	69.3	18,991	73.8
Thoracic Surgery	2,294	1,279	55.8	1,421	61.9
Urology	67,907	57,176	84.2	58,532	86.2
Nephrology	11,634	7,627	65.6	8,261	71.0
Group Practice	73,527	492,279	67.0	54,180	73.7
Other Specialties	77,273	54,062	70.0	56,928	73.7

(1) Matched to the five-digit level. Results were essentially unchanged in matching at the four-digit level.

Exhibit 8

FREQUENCY OF MATCHING DIAGNOSIS CODES BETWEEN PHYSICIAN VISIT AND ANCILLARY SERVICE, BY TYPE OF ANCILLARY

	Primary Diagnosis of Physician Visit Equal to Primary Diagnosis of Ancillary Service (1)		Any Diagnosis of Physician Visit Equal to Any Diagnosis of Ancillary Service (1)	
Ancillary Type	Frequency	Percent	Frequency	Percent
Specialist - Other	2,747	85.2 %	2,775	86.0 %
Specialist - Pathology	3,638	31.1	4,412	37.7
Lab Tests	847,225	66.9	925,166	73.1
Other Tests	135,350	92.3	137,927	94.1
Radiology	117,307	63.0	126,224	67.8

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(1) Matched to the five-digit level. Results were essentially unchanged in matching at the four-digit level.

/REPACK/NCHRPT/TABLES/EXH8.XLS

GLOSSARY

CLM_DISP_CD	Claim Disposition Code The code indicating the disposition or outcome of the processing of the institutional or CWFB claim.
CLM_FREQ_CD	Claim Frequency Code The third digit of the type of claim code used to indicate the sequence of a claim in the beneficiary's current episode of care associated with a given facility.
CLM_FROM_DT	Claim From Date On an institutional or CWFB claim, the first day of the institutional provider's or the physician/supplier's billing statement for services rendered to the beneficiary.
CLM_PMT_AMT	Claim Payment Amount Amount of payment made to provider and/or beneficiary from the trust funds (after deductible and coinsurance have been paid) for the services covered by an institutional claim, or for the services included as a line item on a CWFB physician/supplier claim.
CLM_QUERY_CD	Claim Query Code The code indicating the type of claim being processed with respect to payment (e.g., credit adjustment, debit adjustment, interim claim, final claim).
CLM_THRU_DTE	Claim Through Date On an institutional or CWFB claim, the last day of the institutional provider's or the physician/supplier's billing statement for services rendered to the beneficiary.
CLM_TRANS_CD	Claims Transaction Code The code indicating the type of claim being submitted by an institutional provider.
CWF_CLM_ACRTN_DT	CWF Claim Accretion Date The date the institutional or CWFB claim is accreted (posted/processed) to the beneficiary master record at the CWF host site and authorization for payment is returned to the fiscal intermediary or carrier.
CWF_CLM_ACRTN_NUM	CWF Claim Accretion Number The sequence number assigned to the institutional or CWFB claim when accreted (posted/processed) to the beneficiary master record at the CWF host site on a given day.
CWFB_1ST_EXPNS_DT	CWFB First Expense Date Beginning date (1st expense) for this service included as a line item on the CWFB claim.

CWFB_ALOW_CHRG_AMT	CWFB Allowed Charge Amount The amount of allowed charges reported on the line item on the CWFB claim.
CWFB_CLM_ENTRY_CD	CWFB Claim Entry Code Carrier-generated code describing whether Part B is original debit (1); full credit (3); or replacement debit (5).
CWFB_CLM_PMT_DNL_CD	CWFB Claim Payment Denial Code The code indicating to whom payment was made for the CWFB claim, or if a CWFB claim was denied.
CWFB_PRCSG_IND_CD	CWFB Processing Indicator Code The code indicating the reason a line item on the CWFB claim was allowed or denied.
FICARR_CLM_CNTL_NUM	Fiscal Intermediary/Carrier Control Number Unique control number assigned by intermediary or carrier to an institutional or CWFB claim.
PMT_EDIT_RIC_CD	Payment and Edit Record Identification Code The code used for payment and editing purposes that indicates the type of form on which an institutional claim originated (e.g., inpatient, outpatient, Christian Science, HHA, and Hospice)
PROVNUM	Provider Number The identification number of the provider certified by Medicare to provide services to the beneficiary.
RIC_CD	Record Identification Code A code defining the type of record being processed (e.g., inpatient claim, outpatient claim, physician/supplier claim, etc.).

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